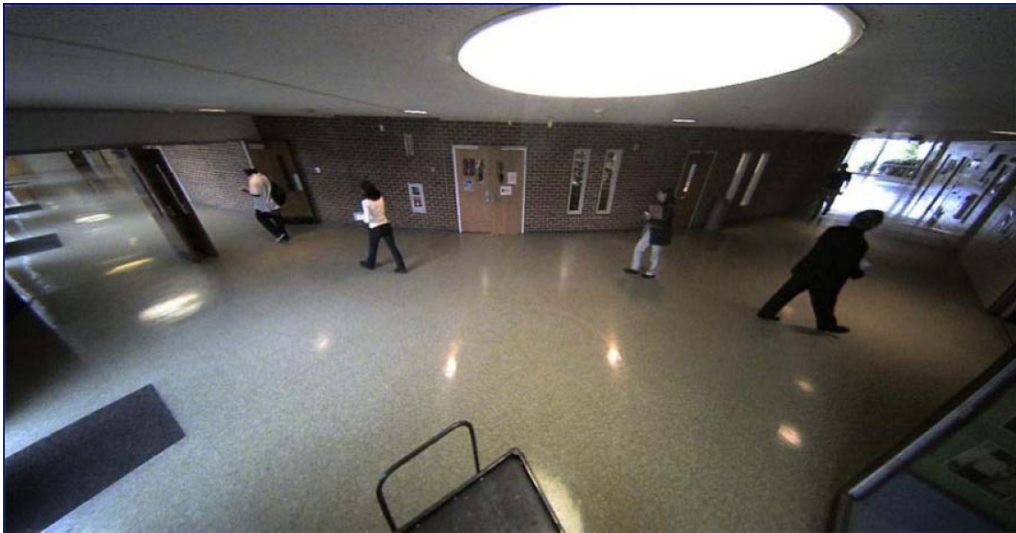




The Case of the Hexagonal Hallway.

Arecont Megapixel Cameras and Their Wide Angle Lenses
Deliver Undistorted, Detailed Views At Salem, N.J., High School.



Security view of Salem High School Hexagonal Hallway ring
as taken by an Arecont Vision AV5105 camera and Theia SY125M.

A hexagonal hallway connects three wings at one of the oldest comprehensive high schools in New Jersey, presenting a unique video surveillance challenge. The multiple angles of the hexagonal design at Salem High School in Salem, N.J. suggested a need for more than the usual number of cameras to cover the area with lenses that could limit the views. The hexagonal hallway dilemma was just one of the quandaries solved by the selection of Arecont Vision megapixel cameras for this installation. The solution incorporates the latest camera technology offering 5-megapixel images, along with wide angle lenses that provide warp-free images that use every single dot in the 5-million-pixel image.

“Every installer we contacted said the angles were way too aggressive in the hexagonal ring and wanted us to double our cameras and halve the angles at the very least,” said a technology department spokesperson for the Salem City School District.

School officials sought to update their video surveillance system. The existing system was analog and did not provide enough resolution for wide-angle lenses. Also, there was no pan-tilt-zoom capability, and staff limitations meant there was no one available to monitor the video.

The school needed a system to provide identification of individuals at entry and exit points, and it needed to be able to recognize people in parking lots. Finding a system that would provide high detail capabilities was an especially difficult challenge, given the school's distinctive hexagonal hallway.

The solution came by combining megapixel cameras from Arecont Vision with wide-angle lenses from Theia Technologies. Merging the capabilities of both technologies enabled the high school to significantly reduce the number of cameras it needed, and to get superior images in the process.

The Right Cameras and Lenses

Offering a full complement of college preparatory level courses as well as technologically enhanced courses related to computer literacy, Salem High School is one of only 10 schools in the state that are part of the Interdistrict Public School Choice Program sponsored by the New Jersey Department of Education. The school serves around 700 students in grades 9-12 and welcomes students from Elsinboro, Lower Alloways Creek Township, Mannington Township and Quinton Township as part of its sending/receiving relationships.

The school had evaluated two or three other vendors, but the lenses tended to have a severe "fisheye" effect, and the images were often blurry even with a 5-megapixel camera resolution. "We actually got into a few heated arguments with vendors and installers," the school representative said. "We did the math, and we knew the Arecont Vision 5105 camera could pull off the application in the hexagonal hallway. We just had to find a lens that could prove them all wrong. We went searching and the only thing that met our specs was the Theia lens. Jaws dropped when they saw the pictures. Not only did we get the massively wide angles we needed, but we did it without the fisheye everyone told us was impossible to avoid."

Theia Technologies' ultra-wide rectilinear lens for the security market provides fields-of-view of up to 135 degrees while almost completely eliminating barrel ("fisheye") distortion, which is corrected using Theia's patented Linear Optical Technology™. Barrel distortion causes the image to be compressed and data to be lost at the edges of the image. Though software can de-warp the fisheye distortion, the lost information cannot be recovered through software. With Theia's optical distortion correction, no data is lost at the edges of the image, increasing the ease of detection and identification in those areas.

The system at Salem High School includes two Arecont Vision 8360 360-degree, 8 megapixel 6-in. dome cameras – one for the cafeteria and one for the computer lab. Each panoramic camera provides four 1600x1200-pixel images at 22 frames-per-second, and can take the place of up to 24 analog cameras. Featuring Arecont Vision's SurroundVideo® technology, the cameras are priced at a fraction of what it would cost to provide the same coverage with multiple conventional megapixel IP cameras.

The school also opted for 34 Arecont Vision 5105 cameras, 5.1-megapixel cameras that offer 2592x1944-pixel images at 9 frames-per-second. The cameras use twelve SY125M, 135-degree lenses provided by Theia Technologies – six covering the hexagonal hallway, two covering parking/open field areas, one covering the front entrances, two covering corners of building wings and one covering two temporary buildings. The system also uses eight 90-degree and eighteen 25-degree lenses.

"Arecont Vision is an excellent partner for our company because their high resolution technology can really do our megapixel lenses justice," began Jeff Gohman, President of Theia Technologies. He continued, "Their cameras ensure a true, crisp translation of the pixels transmitted through our precision lenses onto the sensor and presented on the monitor. With our ultra wide field of view, we can support Arecont's goal of providing their customers with the best possible image at an unbeatable value by reducing the number of cameras, monitoring and maintenance in an installation."

Smart product design made it easy for Salem High School to use Arecont Vision's megapixel cameras. Because the size of the cameras is less than 3 inches, they are easy to fit into most

popular domes and housings. The system at Salem High School includes indoor and outdoor domes from various manufacturers.

The system was designed by the school technology department with support from Arecont Vision. Installation was completed by Excel Communications Worldwide, Inc., Harleysville, Pa., a provider of electronic security systems including system integration.

Megapixel Performance Pays Off

Video from the system is viewed on eight 32-inch flat screen monitors placed in the administration and security office, and in the hallway for students to see. Video is stored for seven to 10 days using 14-terabyte data storage, and can be viewed with Web-based access.

Megapixel cameras enable important functionality that is unattainable with analog cameras. High-resolution archives allow "zoom-after-event," thus reducing the need for real-time zoom-in decisions by security personnel and enabling one person to handle the surveillance of much larger areas, an important consideration when resources are scarce. Megapixel cameras can also deliver multiple video streams in various formats, which allows for zooming on some areas while maintaining an eye on the entire scene, thus keeping school officials oriented to the big picture. In contrast, with mechanical zoom optics, zooming implies a reduction in the field of view.

The resolution benefits of the Arecont camera/Theia lens combination enable operators of the Salem High School system to recognize precise details, down to the ability to tell if someone is holding a pencil. The school is so happy with the system that they plan to upgrade other schools in the district. "We have been using it for over a month and we still shake our heads in disbelief when we walk by a flat panel showing these images," the technology department representative said.

This need to recognize the details in a scene is driving more users to transition to megapixel technology, and Arecont Vision's imaging performance is leading the transition, as is the availability of features that are superior to conventional analog cameras as well as other megapixel cameras at a competitive price point. Arecont Vision's cameras have overcome

the obstacles of megapixel imaging that have perplexed some other camera manufacturers who offer high prices, slow frame rates, and poor night-time sensitivity.

At Salem High School, the Arecont Vision solution proved to be very cost-effective, coming in at 30 percent under budget. The technology of megapixel cameras made it possible to cover a larger area with fewer cameras, while providing superior image performance as well.

“Combining unique Arecont Vision megapixel technology with high quality optics from Theia Technologies provided this user with a solution that was tailor-made for the task of securing Salem High School,” said Raul Calderon, Vice President of Strategic Relations, Arecont Vision. “Users are increasingly looking for suppliers to respond to the specific needs of their applications, and at Arecont Vision we are proud of our proactive efforts to combine the best of megapixel technology with the best complementary technologies offered by other suppliers. When that happens, everybody wins – especially the customer.”

XXX